

WHAT IS CLAIMED IS:

1. A duo-binary optical transmission apparatus, comprising:
 - a light source for outputting a light carrier;
 - 5 an optical modulator for modulating the light carrier according to a 2-level data signal;
 - the optical modulator comprises:
 - a code converter for converting the 2-level data signal into a duo-binary signal;
 - a driving signal generator for receiving the duo-binary signal and generating a
 - 10 modulator driving signal;
 - a light intensity modulator for receiving the modulator driving signal, for converting a phase of the light carrier, and for outputting a modulated optical signal; and
 - an optical band pass filter for receiving the modulated optical signal from the light intensity modulator, for filtering the modulated optical signal to be suitable for a
 - 15 predetermined band, and for outputting a duo-binary optical signal.
2. The duo-binary optical transmission apparatus of claim 1, wherein the light intensity modulator is a Z-cut dual armed light intensity modulator.
- 20 3. The duo-binary optical transmission apparatus of claim 1, wherein the light intensity modulator is an X-cut dual armed light intensity modulator.

4. The duo-binary optical transmission apparatus of claim 1, wherein the characteristic of the output signal of the wide band pass filter is varied according to a bandwidth of the wide band pass filter.

5 5. A duo-binary optical transmission apparatus, comprising:
a duo-binary precoder for encoding a 2-level data signal;
a pair of driving amplifiers coupled to receive the output of the duo-binary precoder;
a laser light source for outputting a light carrier;
10 a light intensity modulator for modulating the light carrier according to the 2-level data signal; and,
a wide band pass filter coupled to receive the output of the light intensity modulator to generate a duo-binary optical signal.

15 6. The duo-binary optical transmission apparatus of claim 5, wherein the characteristics of the duo-binary optical signal are varied by controlling an applied voltage and a bandwidth of the wide band pass filter.

7. The duo-binary optical transmission apparatus of claim 5, wherein the
20 wide band pass filter is further operative to filter the modulated light signal to be suitable for a predetermined band.

8. The duo-binary optical transmission apparatus of claim 5, wherein the pair of driving amplifiers is configured to apply 3-level signals to the light intensity modulator.

9. The duo-binary optical transmission apparatus of claim 5, wherein the
5 light intensity modulator is a Z-cut dual armed light intensity modulator.

10. The duo-binary optical transmission apparatus of claim 5, wherein the light intensity modulator is an X-cut dual armed light intensity modulator.

10 11. The duo-binary optical transmission apparatus of claim 5, wherein the light modulator is further operative to convert a phase of the light carrier.

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